using z-transforms to identify non-deterministic components of said content signal; and

encoding carrier signal independent data into said identified non-deterministic components of said content signal to create a digital sample stream.

22. The method according to claim 21, wherein said carrier signal independent data comprises digital watermark data.

23. The method according to claim 21, wherein at least one location within the content signal at which the carrier signal independent data is to be encoded is selected based upon the position of a watermarking party in a distribution chain and based upon the length of said carrier signal independent data.

24. The method according to claim 21, wherein said step of encoding uses an inverted filter to assist in the encoding carrier signal independent data into said identified non-deterministic components of said content signal.

25. The method according to claim 21 further comprising:

preserving information regarding the non-deterministic components of said content signal.

26. The method according to claim 25, wherein said preserving step comprises saving information regarding the non-deterministic components of said content signal to a digital storage medium.

27. The method according to claim 25, wherein said preserving step comprises summarizing said identified non-deterministic components using stochastical methods.

28. A method of detecting digital watermark data that has been placed within a digital sample stream, comprising:

receiving a digital sample stream in which digital watermark data has been placed, said digital watermark comprising carrier signal independent data;

using z-transform calculations to identify non-deterministic components of said digital sample stream; and

decoding said carrier signal independent data from the identified non-deterministic components of said digital sample stream.

29. The method according to claim 28, wherein the step of decoding comprises decoding carrier signal independent data using information regarding one or more locations of said identified non-deterministic components.

30. A method of analyzing deterministic and non-deterministic components of a signal, comprising

a) receiving a content signal comprising a digital sample stream;

b) using linear predictive coding calculations to identify deterministic and non-deterministic components of said content signal, said non-deterministic signal components being characterized by at least one of the following group:

i) a discrete series of digital samples, and

ii) a discrete series of carrier frequency sub-bands of the content signal; and

c) encoding carrier signal independent data in the non-deterministic signal components of the content signal.

31. The method according to claim 30, wherein said carrier signal independent data comprises digital watermark data.

32. The method according to claim 30, wherein the step of encoding carrier signal independent data comprises:

encoding carrier signal independent data such that it is concentrated primarily in the non-deterministic signal components of the content signal and such that said carrier signal independent data is located within the non-deterministic signal components using information about the position of a watermarking party in a distribution chain.

33. A method of using z-transform calculations to measure a desirability of particular locations in a sample stream in which to encode carrier signal independent data, comprising:

receiving a sample stream; and

using z-transforms to identify locations in said sample stream which would be desirable for encoding carrier signal independent data, wherein said locations are identified using at least one of the following characteristics of said sample stream: wave, amplitude, frequency, band energy, and phase energy.

34. The method according to claim 33, further comprising:

encoding said carrier signal independent data into said identified locations of said sample stream to produce an embedded sample stream.

35. The method of claim 34, further comprising compressing the carrier signal independent data before the encoding step.

36. The method of claim 34, further comprising compressing the sample stream before using z-transforms to identify locations.

37. The method of claim 34, further comprising compressing the embedded sample stream.

38. The method of claim 34, further comprising compressing the carrier signal independent data before the encoding step and compressing the embedded sample stream.

39. A method of detecting at least one of a plurality of digital watermarks that have been placed within a digital sample stream, comprising:

receiving a digital sample stream in which a plurality of digital watermarks have been placed;

using a first set of z-transform calculations to identify non-deterministic components of said digital sample stream; and

decoding at least one first digital watermark from the identified non-deterministic components of said digital sample stream.

40. The method according to claim 39 wherein the step of decoding comprises decoding at least one first digital watermark using information regarding one or more locations of said identified non-deterministic components.

41. The method according to claim 39, further comprising:

removing said at least one first digital watermark from the digital sample stream, resulting in a modified digital sample stream;

using a second set of z-transform calculations to identify non-deterministic components of said modified digital sample stream; and

decoding at least one second digital watermark from the identified non-deterministic components of said modified digital sample stream.

42. The method according to claim 41, wherein said first set of z-transform calculations contain the same algorithms as the second set of z-transform calculations.

43. A method of detecting at least one of a plurality of digital watermarks that have been placed within a digital sample stream, comprising:

receiving a digital sample stream in which a plurality of digital watermarks have been placed;

using a first set of linear predictive coding calculations to identify non-deterministic components of said digital sample stream; and

decoding at least one first digital watermark from the identified non-deterministic components of said digital sample stream.

44. The method according to claim 43, wherein the step of decoding comprises decoding at least one first digital watermark using information regarding one or more locations of said identified non-deterministic components.

45. The method according to claim 43, further comprising:

removing said at least one first digital watermark from the digital sample stream, resulting in a modified digital sample stream;

using a second set of linear predictive coding calculations to identify non-deterministic components of said modified digital sample stream; and

decoding at least one second digital watermark from the identified non-deterministic components of said modified digital sample stream.

46. The method according to claim 45, wherein said first set of linear predictive coding calculations contain the same algorithms as the second set of linear predictive coding calculations. --

REMARKS

Applicants respectfully request that these amendments be entered in the subject application prior to examination.

Respectfully submitted,

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